## CLAIMS

What is claimed is:

1. A method of communicating sensor data and calibration data from a sensor to a data acquisition system over a multi-conductor cable, comprising:

storing calibration data associated with a sensor in said sensor;

transmitting analog sensor data from said sensor on a plurality of conductors; and

transmitting digital calibration data from said sensor on at least one conductor by successively driving the voltage on said conductor to first and second predetermined voltage levels for predetermined durations, to communicate said calibration data as a digital bitstream.

2. The method of claim 1, further comprising receiving said analog sensor data at a corresponding plurality of inputs to said data acquisition system.

3. The method of claim 2, further comprising receiving said digital calibration data at an input to said data acquisition system and interpreting said succession of voltage levels as a digital bitstream.

4. The method of claim 2, further comprising receiving said digital calibration data at an independent port of said data acquisition system.

5. The method of claim 4 wherein said port complies with an EIA standard selected from the group consisting of RS-232, RS-423, RS-422 and RS-485.

6. The method of claim 4 wherein said multi-conductor cable includes at least two connectors on the data acquisition system end, one said connector mated to an input connector on a data acquisition card and one said connector mated to said independent port input connector.

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7. A force/torque (FT) sensor, comprising:

a sensor housing;

at least one transducer within said sensor housing operative to convert an applied force or torque to a transducer electrical signal;

electronics operative to convert said transducer electrical signal to a force/torque signal suitable for reception by a data acquisition system and to transmit said force/torque signal in analog format on a multi-conductor cable; and

memory for storing digital calibration data associated with said sensor.

8. The FT sensor of claim 7 wherein said electronics and said memory reside within said sensor housing.

9. The FT sensor of claim 8 wherein said electronics is operative to transmit said force/torque signal in analog format on one channel of said multi-conductor cable, and to transmit said digital calibration data as a digital bitstream on another channel of said multi-conductor cable.

10. The FT sensor of claim 9 wherein said force/torque signal and said calibration data are transmitted as differential pairs.

11. The FT sensor of claim 7 further comprising a power supply in a power supply housing, separate from said sensor housing, said power supply operative to supply power to said FT sensor.

12. The FT sensor of claim 11 wherein said electronics and said memory reside within said power supply housing.

13. The FT sensor of claim 12 wherein said electronics is operative to transmit said force/torque signal in analog format on one channel of said multi-conductor cable, and to transmit said digital calibration data as a digital bitstream on another channel of said multi-conductor cable.

14. The FT sensor of claim 13 wherein said force/torque signal and said calibration data are transmitted as differential pairs.

15. The FT sensor of claim 7 further comprising a data acquisition system attached to said multi-conductor cable and operative to receive said force/torque signal and said calibration data as analog inputs.

16. The FT sensor of claim 15 wherein said data acquisition system interprets said calibration data as a digital bitstream.

17. The FT sensor of claim 7 further comprising a data acquisition system attached to said multi-conductor cable to receive said force/torque signal and a data communications port also attached to said multi-conductor cable to receive said calibration data.

18. The FT sensor of claim 17 wherein said data communications port complies with the EIA RS-232 standard.

19. The FT sensor of claim 18 wherein the two differential lines of said multi-conductor cable carrying said calibration data are connected to the receive data and signal ground connectors of said data communications port.

20. A method of communicating sensor data and calibration data from a sensor associated with a robot to a data acquisition system over a multi-conductor cable, comprising:

storing calibration data associated with a sensor associated with a robot, in said sensor;

transmitting analog sensor data from said sensor on a plurality of conductors; and

transmitting digital calibration data from said sensor on at least one conductor by successively driving the voltage on said conductor to first and second predetermined voltage levels for predetermined durations, to communicate said calibration data as a digital bitstream.